

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
3 November 2005 (03.11.2005)

PCT

(10) International Publication Number
WO 2005/102879 A1

(51) International Patent Classification⁷: **B65G 37/02**,
1/04, 43/10

(74) Agent: **VIEIRA PEREIRA FERREIRA, Maria,**
Silvina; Clarke, Modet & C^o, Rua Castilho n.º 50 - 5º,
P-1269-163 Lisboa (PT).

(21) International Application Number:
PCT/IB2005/051194

(22) International Filing Date: 12 April 2005 (12.04.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
103111 22 April 2004 (22.04.2004) PT

(81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(71) Applicant (*for all designated States except US*): **INESC PORTO - INSTITUTO DE ENGENHARIA DE SISTEMAS E COMPUTADORES DO PORTO** [PT/PT]; Campus da FEUP, Rua Dr. Roberto Frias, 378, P-4200-465 Porto (PT).

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): **MOREIRA GUARDÃO, Luís. Miguel** [PT/PT]; Rua de Cabanas, 455, 2ºEsq. Tras, P-4510-506 Fanzeres - Gondomar (PT). **DA COSTA GAMA LIMA REBELO, Rui, Diogo** [PT/PT]; Rua Conselheiro Lobato, 310 - 4ºDto., P-4705-089 Braga (PT). **ROCHA E SILVA SÁ MARQUES, Paulo, Jorge** [PT/PT]; Rua do Crasto, n.º 301, P-4415-806 Sandim - Vila Nova de Gaia (PT). **GUEDES, Fernando, Augusto** [PT/PT]; Rua Manuel Fernandes, 6, P-4710 Braga (PT). **CALDEIRA PINTO DE SOUSA, José, Carlos** [PT/PT]; Rua Santiago, n.º410 - 3ºDto., P-4465-748 Leça do Balio, Matosinhos (PT).

(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:

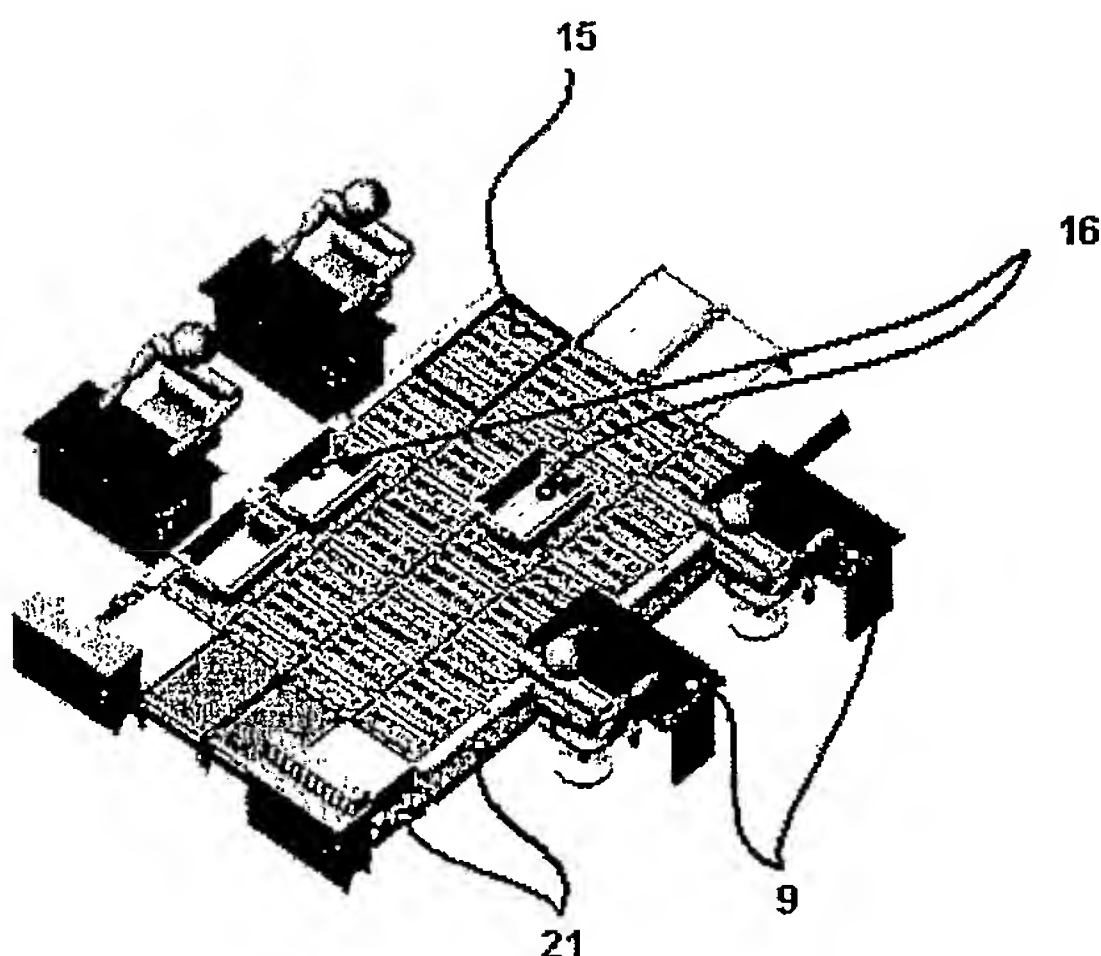
— *of inventorship (Rule 4.17(iv)) for US only*

Published:

— *with international search report*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: DISTRIBUTION AND TEMPORARY STORAGE SYSTEM OF TRANSPORT UNITS



(57) Abstract: The present invention describes a distribution and temporary storage system of transport units (SIDAT), especially created to handle, in production lines with great speed and flexibility requirements, product lots, materials or components of work in progress. Examples of this type of lines are the production lines of companies related to fashion (clothing and foot-wear) and production lines of special products (namely assembly), for sectors such as furniture, metal-mechanics or electronics; the system is based on a matrix of movement cells (15), motorized from a centralised movement bus (21), upon which they are set up, capable of moving the transport units (16) placed upon themselves to the adjacent cells; a logic aggregation of 2 or 4 individual movement cells forms a compound movement cell which is normally associated to the work stations (9); the movement cell matrix may optionally be supplemented with an overhead storage system. The whole system is managed by a programme, which runs on a PC and/or a programmable logic controller allowing the simultaneous and optimised operation of multiple transport units transfers between the cells which form the matrix.